

## **CLAIM AMENDMENTS**

### **Claim Amendment Summary**

#### **Claims pending**

- Before this Amendment: Claims 1-36.
- After this Amendment: Claims 1-36.

**Non-Elected, Canceled, or Withdrawn claims:** none.

**Amended claims:** none.

**New claims:** none

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**Claims:**

1.     **(Original)**   A method comprising:  
  
          receiving a plurality of temporally non-contiguous portions of a streaming media file, at least a first and a second of the non-contiguous portions being encoded at different bit rates; and  
  
          storing the plurality of temporally non-contiguous portions in a single cache file.
  
2.     **(Original)**   A method as defined in claim 1, wherein the first and second non-contiguous portions comprise video data.
  
3.     **(Original)**   A method as defined in claim 1, wherein the first and second non-contiguous portions comprise video data and wherein a third non-contiguous portion comprises audio data.
  
4.     **(Original)**   A method as defined in claim 1, wherein the cache file is stored in non-volatile memory.
  
5.     **(Original)**   A method as defined in claim 1, wherein the act of storing comprises:  
  
          creating a plurality of media cache streams, each media cache stream being associated with a unique bit rate;  
  
          storing the first non-contiguous portion in a media cache stream associated with the bit rate of the first non-contiguous portion;

storing the second non-contiguous portion in a media cache stream associated with the bit rate of the second non-contiguous portion; and  
storing the media cache streams in the cache file.

**6. (Original)** A method as defined in claim 1, wherein the act of storing comprises:

creating a first media cache stream associated with the bit rate of the first non-contiguous portion;

storing the first non-contiguous portion in a media cache segment of the first media segment stream;

creating a second media cache stream associated with the bit rate of the second non-contiguous portion;

storing the second non-contiguous portion in a media cache segment of the second media cache stream;

creating a byte cache index segment and a byte cache data segment for each media cache segment; and

storing the byte cache index segments and the byte cache data segments in the cache file.

**7. (Original)** A method comprising:

creating a plurality of media cache streams, each media cache stream being associated with a unique bit rate;

receiving a plurality of portions of a streaming media file, each portion being associated with a unique temporal section of the streaming media file;

storing each portion in a media cache segment of a media cache stream associated with a bit rate at which the portion was encoded, at least two of the portions being stored in media cache segments in different media cache streams;

storing each of the media cache streams in a single cache file.

**8. (Original)** A method as defined in claim 7, wherein the act of storing comprises:

creating a byte cache index segment and a byte cache data segment for each media cache segment; and

storing the byte cache index segments and the byte cache data segments in the cache file.

**9. (Original)** A method as defined in claim 7, wherein the act of storing comprises:

creating a byte cache index segment and a byte cache data segment for each segment; and

serializing the byte cache index segments and the byte cache data segments in the cache file.

**10. (Original)** A method as defined in claim 7, wherein the cache file is stored in a non-volatile manner.

**11. (Original)** A system comprising:

a data storage module;

a caching module operable to receive and store a plurality of temporally non-contiguous portions of a streaming media file in a cache file in the data storage module, two or more of the plurality of temporally non-contiguous portions being encoded at different bit rates.

**12. (Original)** A system as defined in claim 11, wherein the data storage module comprises a non-volatile data storage device.

**13. (Original)** A system as defined in claim 11, further comprising:  
a processor; and  
wherein the caching module comprises processor executable code.

**14. (Original)** A system as defined in claim 11, wherein the caching module comprises:

a media cache module operable:

to store each of the plurality of temporally non-contiguous portions as a media cache segment in one of a plurality of media cache streams; and

parse each media cache segment into a byte cache index segment and a byte cache data segment.

**15. (Original)** A system as defined in claim 11, wherein the caching module comprises:

a media cache module operable to:

store each of the plurality of temporally non-contiguous portions as a media cache segment in one of a plurality of media cache streams, each media cache stream being associated with a different bit rate; and

parse each media cache segment into a byte cache index segment and a byte cache data segment; and

a byte cache module operable to store the byte cache index segments and the byte cache data segments in the cache file.

**16. (Original)** A system as defined in claim 11, wherein the caching module comprises:

a media cache module operable to:

create a plurality of media cache streams, each media cache stream being associated with a unique bit rate; and

store each temporally non-contiguous portion as a media cache segment in a media cache stream associated with a bite rate at which the temporally non-contiguous portion was encoded; and

parse each media cache segment into a byte cache index segment and a byte cache data segment; and

a byte cache module operable to:

store the byte cache index segments and the byte cache data segments in the cache file.

**17. (Original)** A system as defined in claim 11, wherein the two or more of the plurality of temporally non-contiguous portions include a first video portion encoded

at a first bit rate, a second video portion encoded at a second bit rate, and an audio portion, and wherein the first video portion, the second video portion, and the audio portion are stored in different media cache streams.

**18. (Original)** A system as defined in claim 11, wherein:

the streaming media file includes different data types; and

the caching module is operable to:

create a plurality of media cache streams, each media cache stream being associated with a streamed media data type and a streamed media encoded bit rate;

store each temporally non-contiguous portion of received streamed media data in a media cache stream associated with the streamed media data type and a streamed media encoded bit rate of the temporally non-contiguous portion; and

store the media cache streams in the cache file.

**19. (Original)** A system as defined in claim 11, wherein:

the streaming media file includes different data types; and

the caching module is operable to:

create a plurality of media cache streams, each media cache stream being associated with a streamed media data type and a streamed media encoded bit rate; and

store each temporally non-contiguous portion of received streamed media data as a media cache segment in a media cache stream associated with the streamed media data type and a streamed media encoded bit rate of the temporally non-contiguous portion;

parse each media cache segment into a byte cache index segment  
and a byte cache data segment; and

store the byte cache index segments and the byte cache data  
segments in the cache file.

**20. (Original)** A system as defined in claim 11, wherein the caching module  
is operable to:

store each of the plurality of temporally non-contiguous portions as a media cache  
segment in one of a plurality of media cache streams;

create a segment/stream map specifying the media cache segment and stream in  
which each temporally non-contiguous portion is stored; and

parse each media cache segment into a byte cache index segment and a byte cache  
data segment.

**21. (Original)** A computer-readable medium having computer-executable  
instructions for performing acts comprising:

storing at a client a plurality of temporally non-contiguous portions of a streaming  
media file received from a streaming media source in a cache file, each of the plurality of  
temporally non-contiguous portions being encoded at a different bit rate.

**22. (Original)** A computer-readable medium as defined in claim 21, wherein  
the act of storing comprises:

receiving a first video portion of the streaming media file encoded at a first bit  
rate;



storing the first video portion in a media cache video stream associated with the first bit rate;

receiving a second video portion of the streaming media file encoded at a second bit rate;

storing the second video portion in a media cache video stream associated with the second bit rate;

receiving a first audio portion of the streaming media file;

storing the first audio portion in a media cache audio stream; and

storing the audio and video media cache streams in a cache file.

**23. (Original)** A computer-readable medium as defined in claim 21, wherein the act of storing comprises:

receiving a first video portion of the streaming media file encoded at a first bit rate;

storing the first video portion in a media cache video stream associated with the first bit rate;

receiving a second video portion of the streaming media file encoded at a second bit rate;

storing the second video portion in a media cache video stream associated with the second bit rate;

receiving a third video portion of the streaming media file encoded at a first bit rate, the a third video portion being temporally non-contiguous from the first video portion;

storing the third video portion in the media cache video stream associated with the first bit rate;

receiving a first audio portion of the streaming media file; and

storing the first audio portion in a media cache audio stream; and

storing the audio and video media cache streams in a cache file.

**24. (Original)** A computer-readable medium as defined in claim 21, wherein the act of storing comprises:

storing each of the temporally non-contiguous portions in a unique media cache segment;

forming at least two byte cache segments from each media cache segment; and

storing the byte cache segments in the cache file.

**25. (Original)** A computer-readable medium as defined in claim 21, wherein the act of storing comprises:

storing each of the temporally non-contiguous portions in at least two byte cache segments; and

storing the byte cache segments in the cache file.

**26. (Original)** A computer-readable medium having stored thereon a data structure, comprising:

a plurality of data pages including data representing a plurality of temporally non-contiguous portions of a streaming media file received from a streaming media source, at least two of the temporally non-contiguous portions being encoded at different bit rates.

**27. (Original)** A computer-readable medium having stored thereon a data structure, comprising:

a plurality of data pages storing one or more byte cache segments, each byte cache segment being derived from a temporally non-contiguous portion of a streaming media file, at least two of the temporally non-contiguous portions being encoded at different bit rates; and

a header page including information that describes one or more characteristics of the data pages.

**28. (Original)** A computer-readable medium as defined in claim 27, wherein the header page includes a plurality of cache file control records, each cache file control record including information describing the location of a single byte cache segment the data pages.

**29. (Original)** A computer-readable medium as defined in claim 27, wherein the header page includes a plurality of cache file control records, each cache file control record including information describing a location of a single byte cache segment within the data pages and information indicating a number of pages including the single byte cache record.

**30. (Original)** A computer-readable medium as defined in claim 27, wherein the header page includes a plurality of cache file control records, each cache file control

record including information describing a beginning and an ending point of a single byte cache segment within the data pages.

**31. (Original)** A computer-readable medium as defined in claim 27, wherein:

the header page includes a plurality of cache file control records; and

at least one cache file control record includes an array including the location of each page within the cache file.

**32. (Original)** A computer-readable medium as defined in claim 27, wherein:

the header page includes a plurality of cache file control records; and

at least one cache file control record includes information indicating a page containing a beginning of a single byte cache segment and an index specifying a beginning of the single byte cache segment within the page.

**33. (Original)** A computer-readable medium as defined in claim 27, wherein:

the header page includes a plurality of cache file control records; and

at least one cache file control record includes information defining a beginning and ending locations of a single byte cache segment in the data pages.

**34. (Original)** A computer-readable medium as defined in claim 27, wherein the header page includes a plurality of cache file control records, each cache file control

record being associated with a single byte cache segment, each cache file control record identifying a predetermined number of pages including at least a portion of the byte cache segment associated with the cache file control record, each cache file control record including a pointer to a page including information identifying a predetermined number of pages other than the predetermined number of pages including at least a portion of the byte cache segment associated with the cache file.

**35. (Original)** A computer-readable medium as defined in claim 27, wherein the header page includes:

a predetermined number of cache file control records, each cache file control record including information describing the location of a single byte cache segment in the data pages; and

a pointer to a cache file control record extension page including cache file control records other than the predetermined number of cache file control records.

**36. (Original)** A system comprising:

means for receiving a plurality of temporally non-contiguous portions of a streaming media file, at least two of the plurality of temporally non-contiguous portions being encoded at a different bit rate; and

means for associating and storing the plurality of temporally non-contiguous portions in a data structure.